

ABSTRACT

In a multitasking system executing real-time harmonic and dynamic tasks having various priority levels, slack is stolen from timeline and reclaimed slack to enable execution of high priority non-essential tasks on a best efforts basis. Counts of the amount of slack consumed, slack reclaimed, and periodic compute time consumed are maintained by individual priority level and dynamically updated at certain times. Idle time is calculated by priority level. Available slack is calculated, allocated and consumed by rate, with the highest rate first and the lowest last. Slack is made available to tasks in more than one time partition. All slack belongs to a common system-wide pool of slack obtained from any one or more time partitions. Common slack can also be time-shared by static, non-harmonic tasks residing in different time partitions. Also described are a computer system and methods that perform slack scheduling in a time-partitioned system.